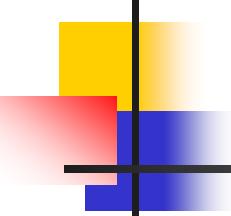


# The State of the Economy and Prospects for Tax Revenue in Tennessee

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*presented to*  
Tennessee State Funding Board  
Nashville Tennessee  
December 9, 2003

*by*  
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# The State of the Economy and Prospects for Tax Revenue in Tennessee

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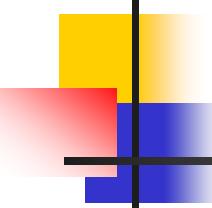
Tennessee Economic Outlook

Outlook for State Revenue

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# The Balance of News

## *Positive Signs Are Visible but Problems Remain*

### *Growth prospects improve in Europe*

- European manufacturing industries grew for third straight month in November

### *Pacific also sees its share of improvements*

- Export-led recovery in Japan but rising yen threatens its
- Japanese government continues to clean up problem banks

### *U.S. economy posting strong economic growth*

- Third quarter GDP growth the fastest in 20 years
- Monthly and quarterly indicators are pointing upward

### *Policy remains accommodative*

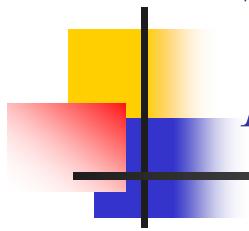
- Most see little chance of tighter policy until late spring or early summer

### *Problems abound in international arena*

- U.S. exports lathargic
- Weak and weakening dollar
- Growing impatience with falling dollar
- Pacific rim may cease supporting the dollar
- Trade unrest among trading partners over U.S. trade restraints

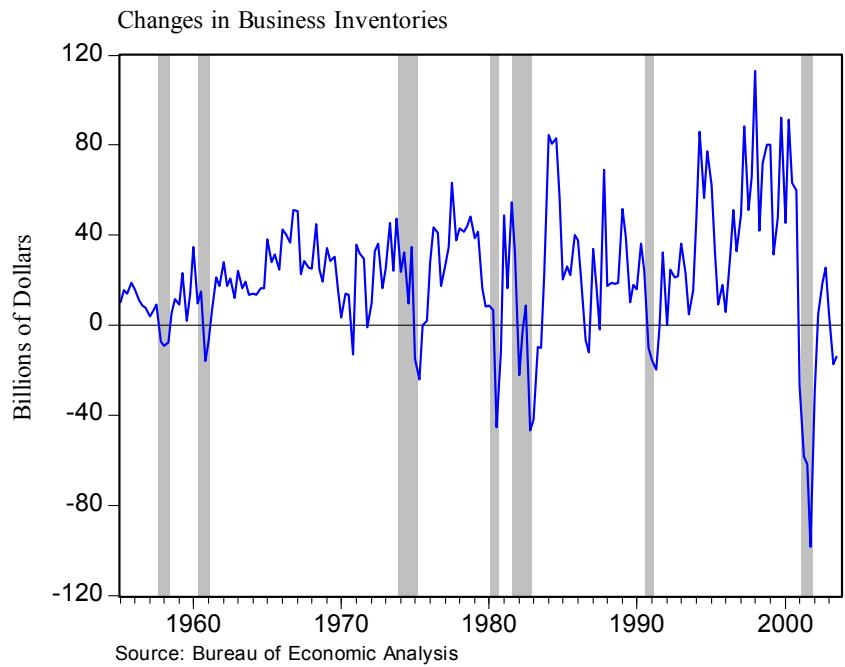
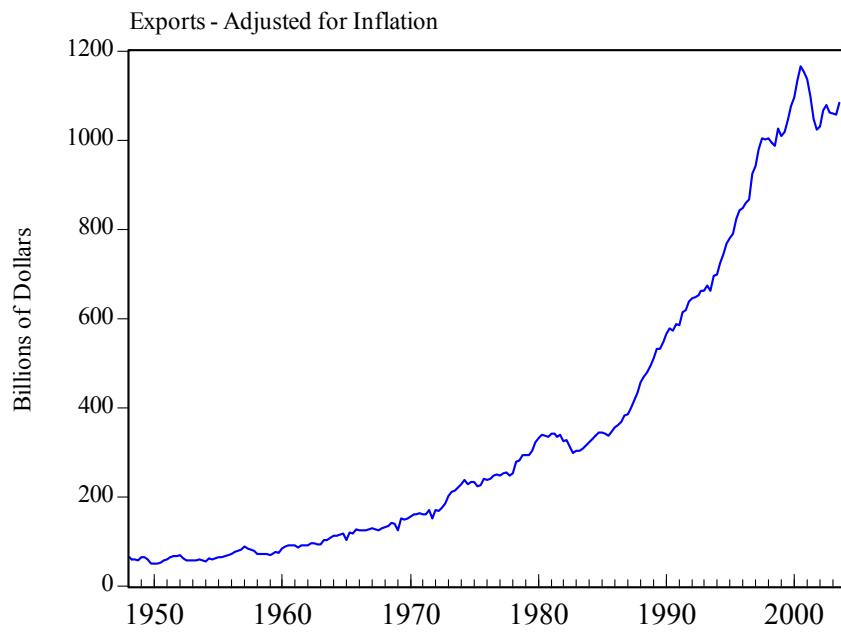
### *Domestic difficulties are also present*

- Jobless recovery
- Equity and bond markets in tug-of-war over likely direction of economy
- Deflation in goods-producing sectors has persisted for over two years
- Housing starts and vehicles sustained by low interest rates



# The U.S. Cycle in Perspective

## *Exports and Changes in Business Inventories*



# The U.S. Business Cycle in Perspective

*Collapse and Recovery in Technology Spending Dominates the Investment Spending Picture*

More than half of equipment and software spending is devoted to information-processing equipment

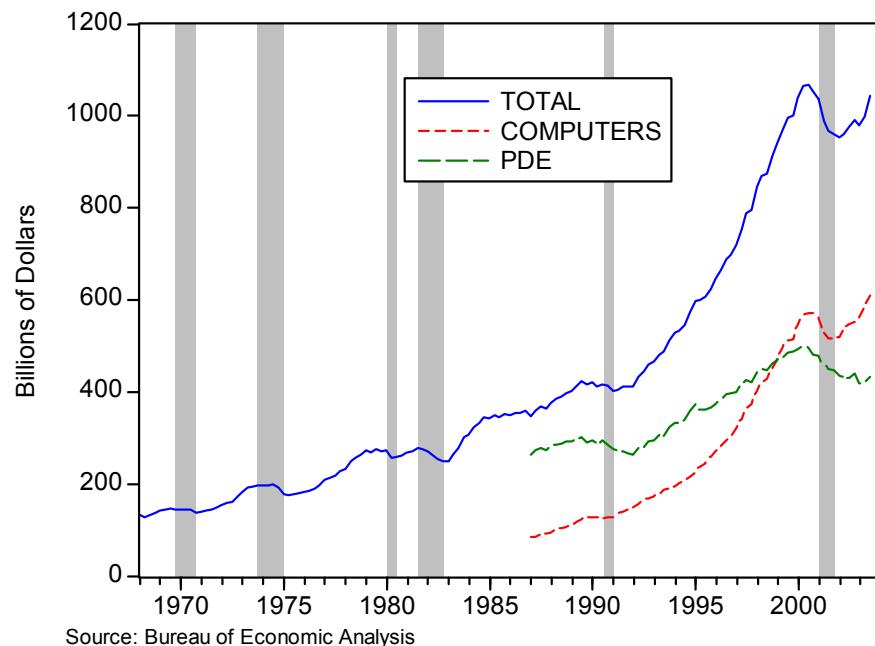
The rest is spread among industrial, transportation, and other equipment

Decline in investment spending was dominated by a fall-off in information-processing equipment

- Computers and peripheral equipment, software, and other spending
- Widespread consensus that technology spending will not quickly rebound

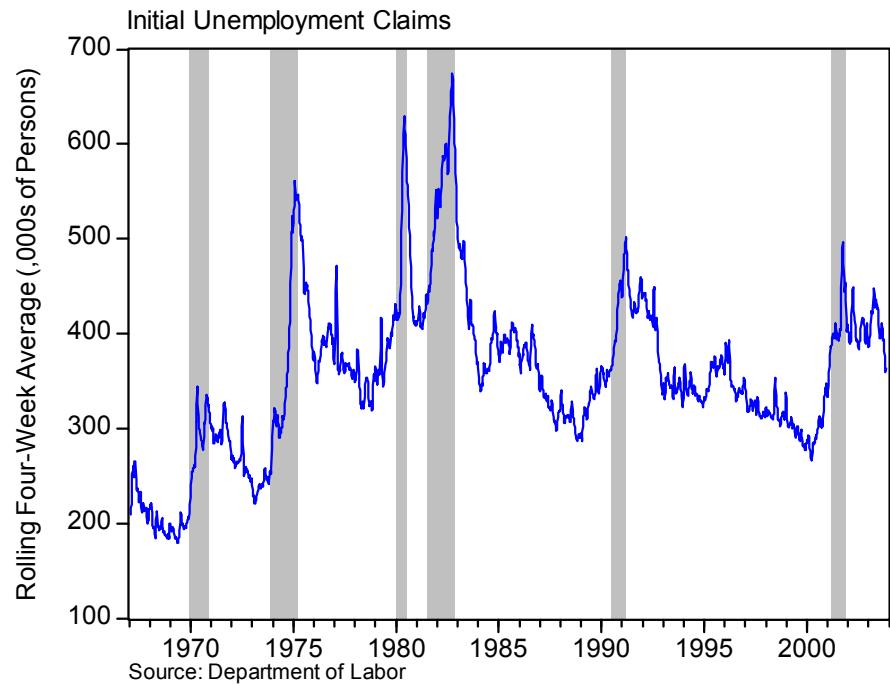
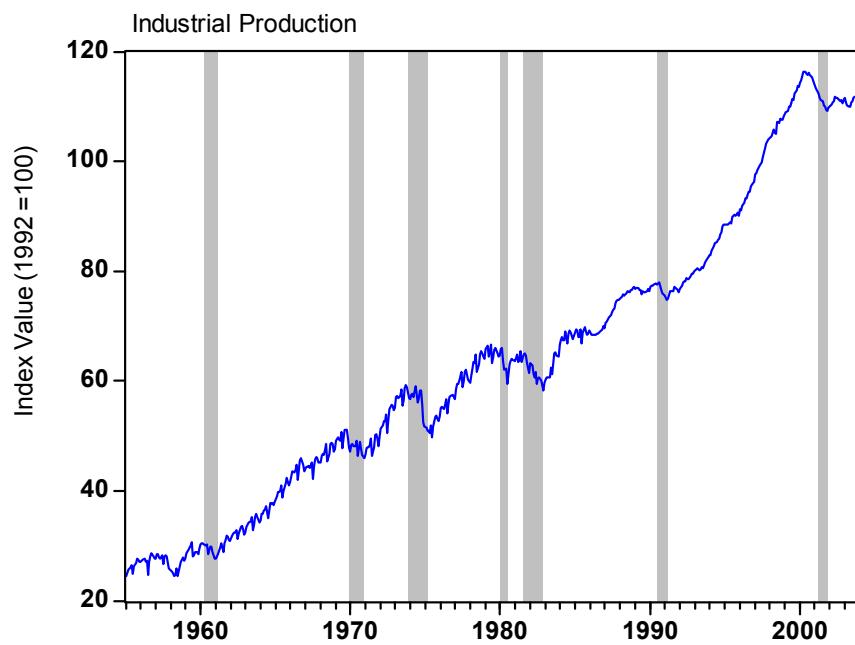
Recovery in investment spending has also been in the technology area

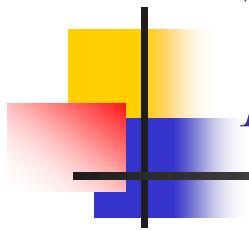
Hard goods still languishes



# The U.S. Cycle in Perspective

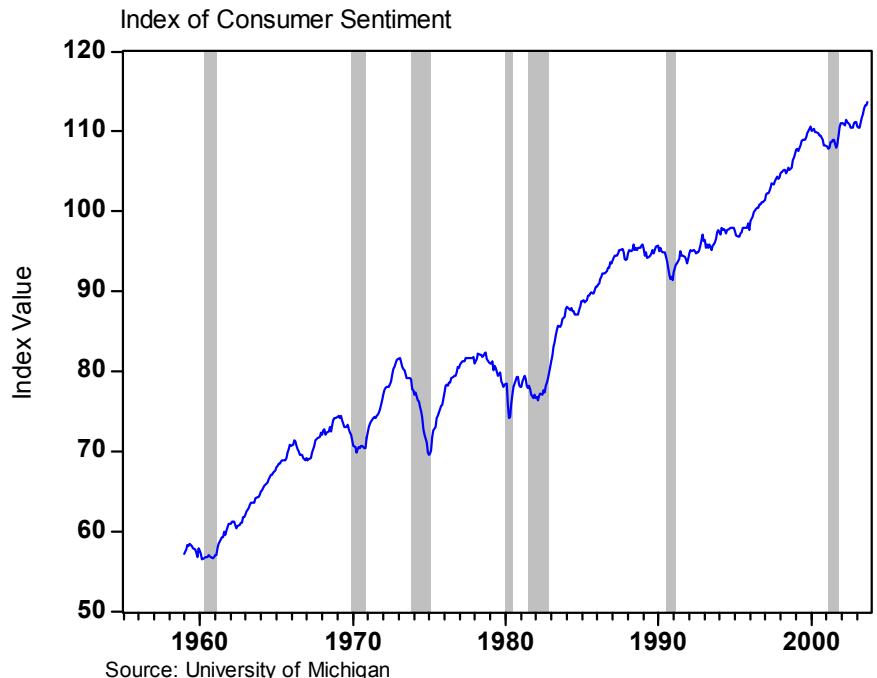
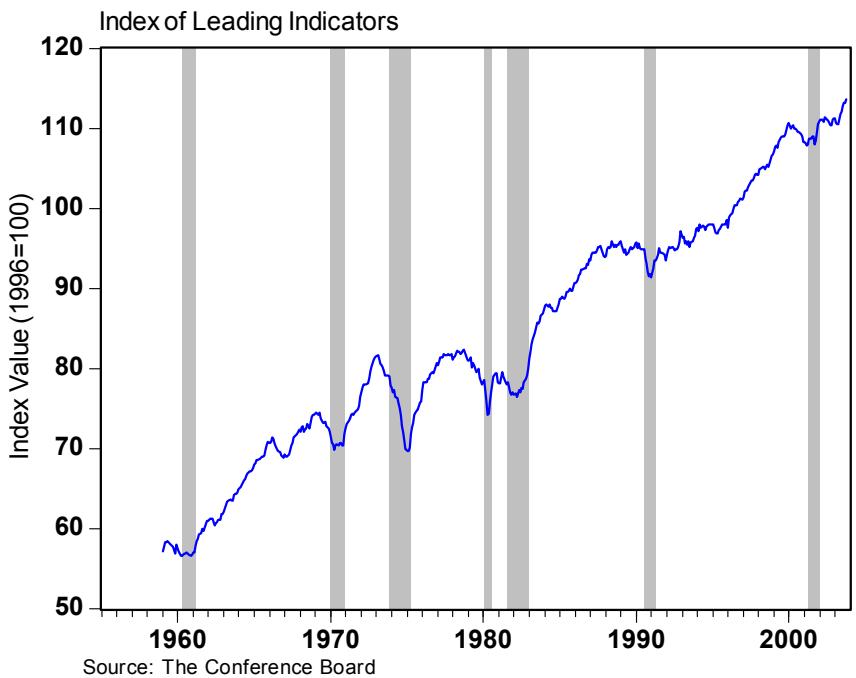
## *Industrial Output and Initial Unemployment Claims*





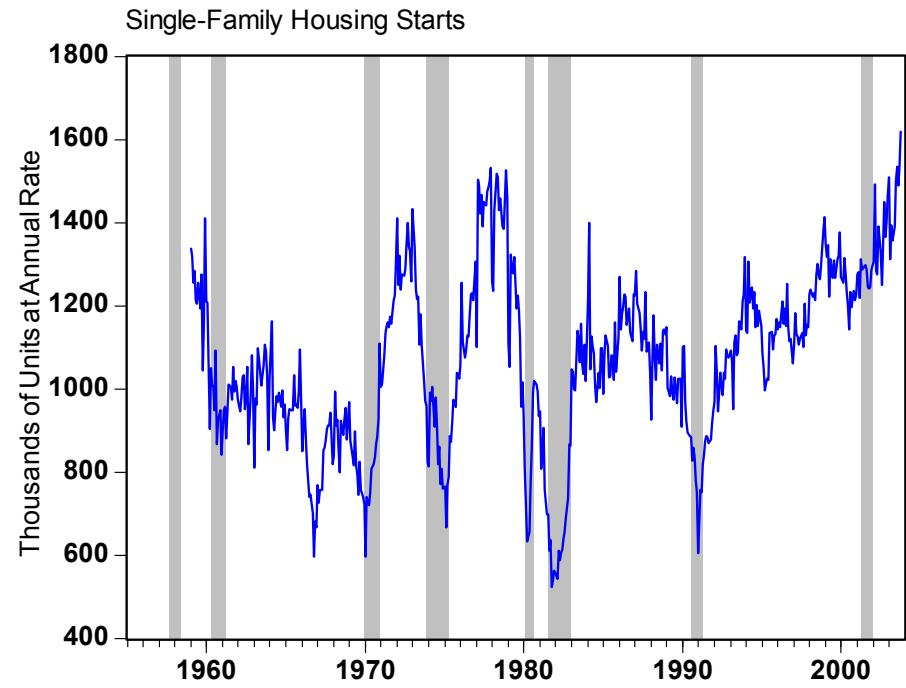
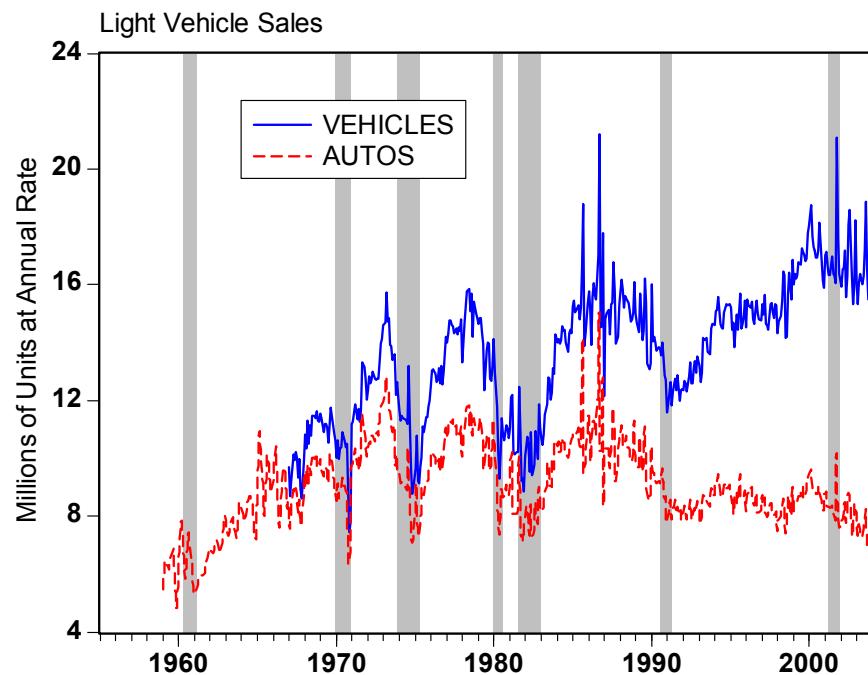
# The U.S. Cycle in Perspective

## *Leading Indicators and Consumer Sentiment*



# The U.S. Cycle in Perspective

## *Light Vehicle Sales and Housing*



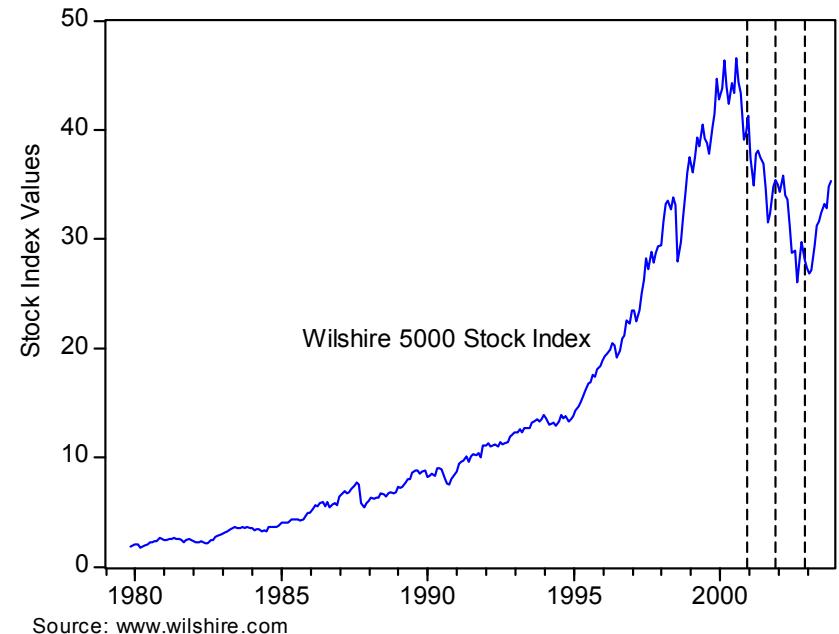
# The U.S. Cycle in Perspective

## *Equity Prices*

2003 is the first year to post a December-to-December gain after three years of declines

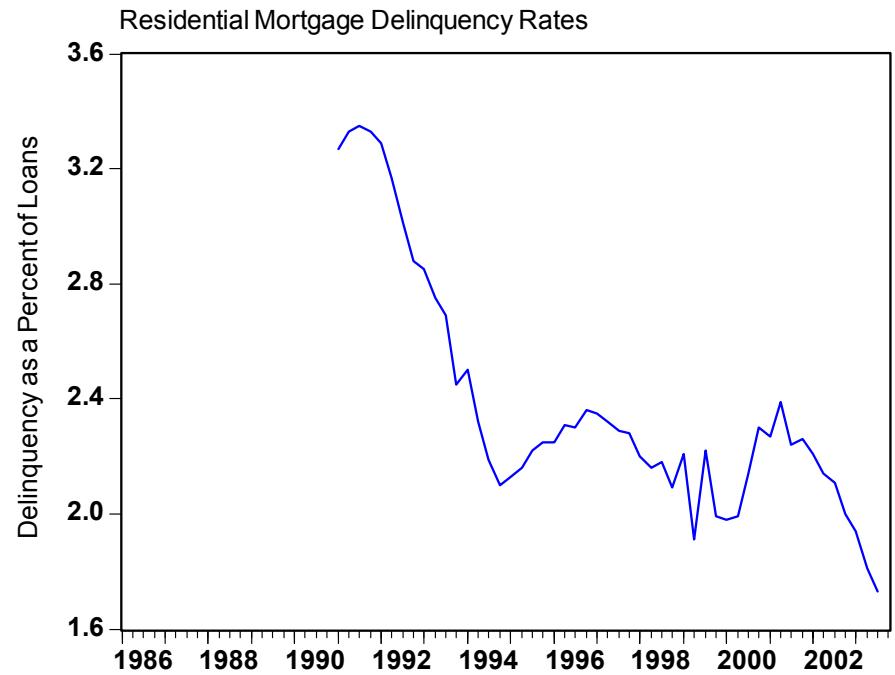
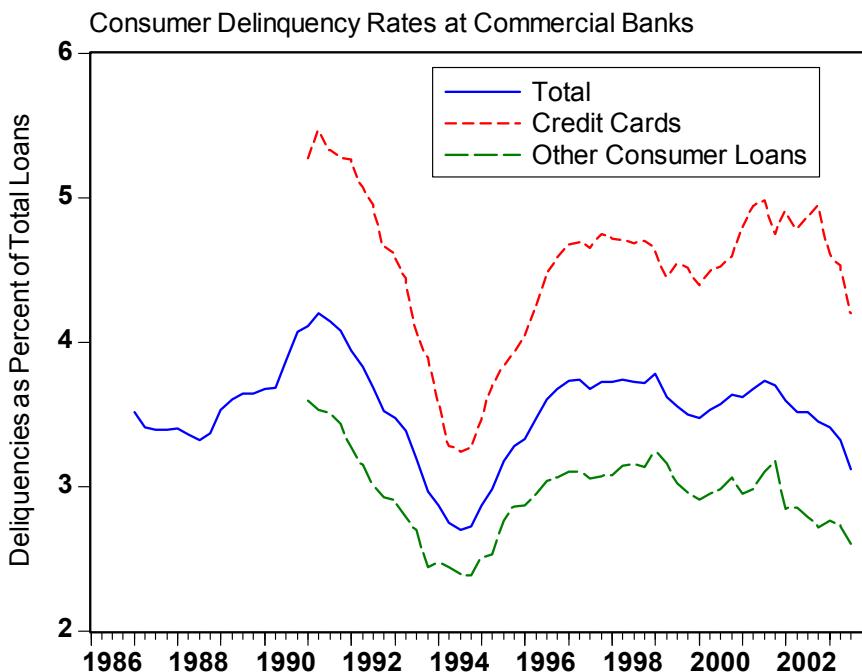
Generally, wealth effect shown to have minimal effect on spending

- Loss of wealth in three previous years did not adversely affect consumer spending
- Gains this year will likely not foster spending next year



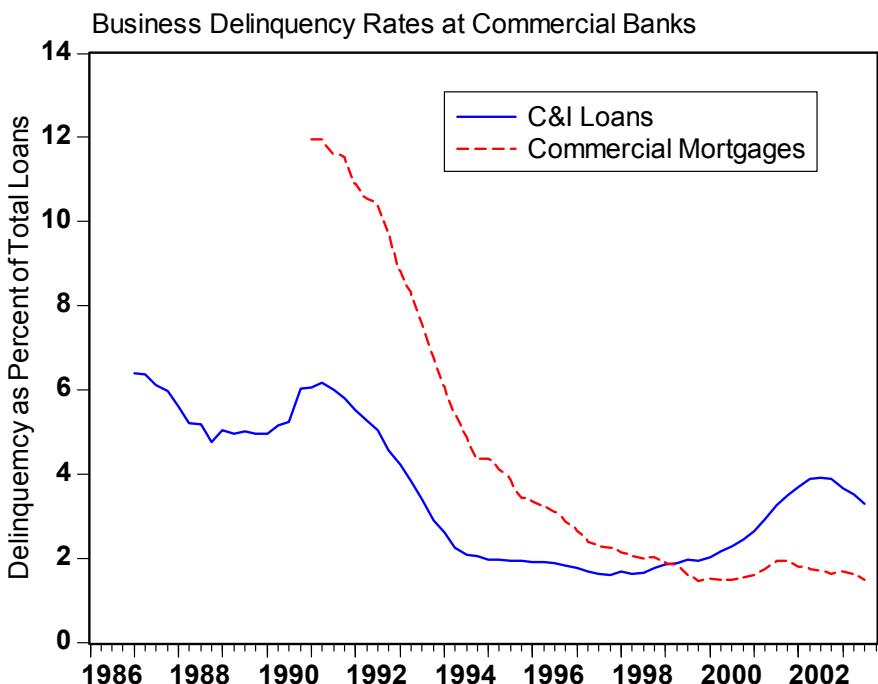
# The U.S. Cycle in Perspective

## *Household Delinquency Rates at Commercial Banks*



# The U.S. Cycle in Perspective

## *Business Delinquency Rates at Commercial Banks*



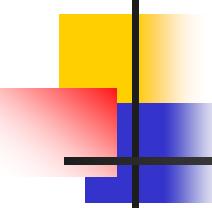
Business loan delinquencies are on decline

There is some very good news in the lending area

- Bank capital is excellent—a far different condition from early 1990s
- The FOMC's liquidity injections have assured availability of loanable funds as the recovery begins

Bottom line:

- The economy has the ability to finance the recovery



# The U.S. Outlook

## *Blue Chip Financial Forecasts – Real GDP*

Forecaster (chart, next page) see  
improvement growth going forward

Chart captures

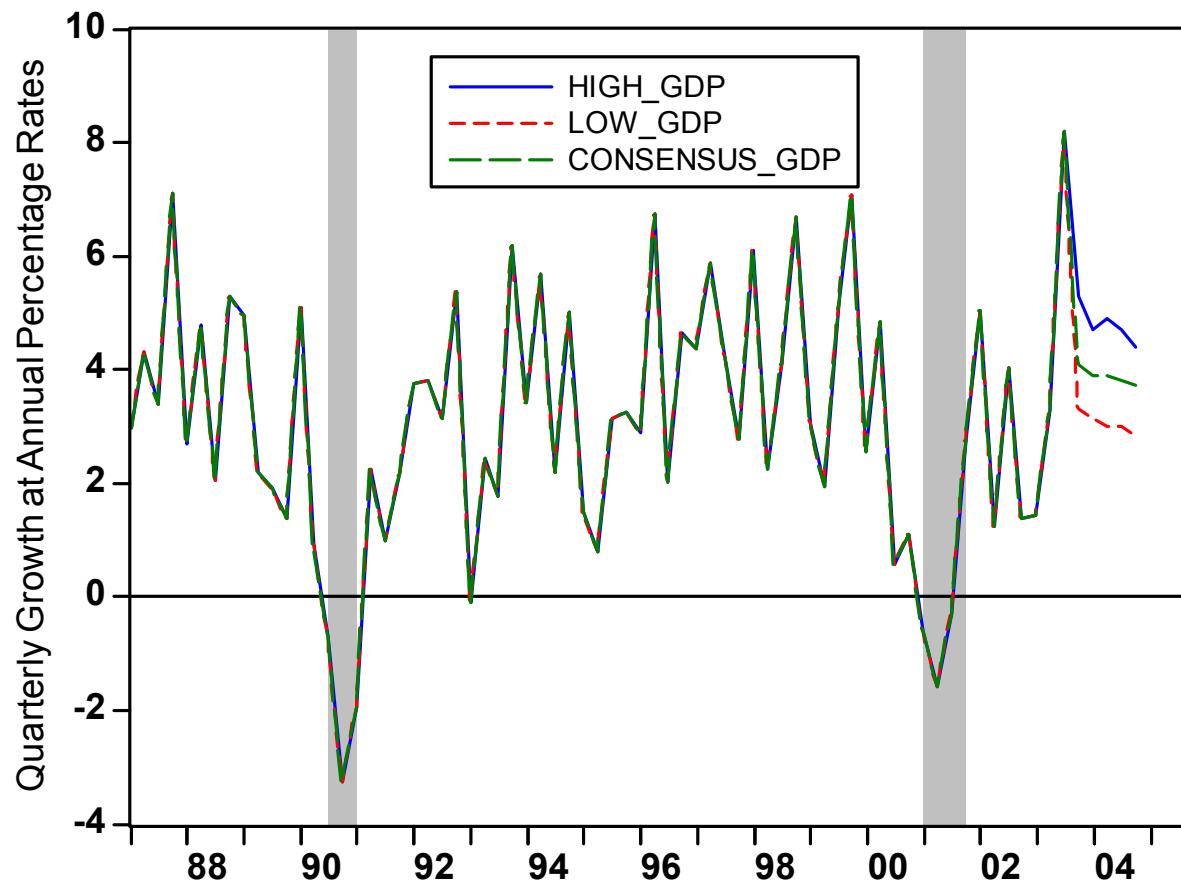
- The average of the 45 respondents for each quarter through fourth quarter of 2004
- The average of the 10 highest and the 10 lowest forecasters

### View on 2004

- Average (consensus) forecast is 3.8% quarterly real GDP growth
- Low probability should be attached to high-growth forecasts (4.7%)
  - This is possible only if there is a very sizeable rebound in economic growth abroad
    - Prospects for this are slim
- Lower bound of 3.0% may be at or slightly stronger than the contingency scenario discussed at the end of this presentation

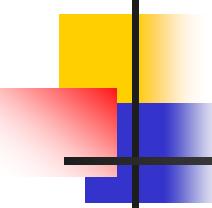
# The U.S. Outlook – Graphic Portrayal

## *Blue Chip Financial Forecasts – Real GDP*









# Outlook for Interest Rates

MTSU

## *Benefits from the current low interest rates*

- Short-term borrowers
  - Prime-rate borrowers
  - ARM borrowers
- Long-term borrowers
  - Low fixed mortgage produced massive refinancings
    - These have run their course
  - Businesses refinanced bonds

## *Baseline forecast:*

- No further cuts in the federal funds rate target
- But also no increase until around mid-year 2004

Increases in short-term rates will continue throughout the forecast horizon

- Assumes that
  - The expansion continues on track
  - Liquidity injected in 2001-03 must be removed to hold line on inflation

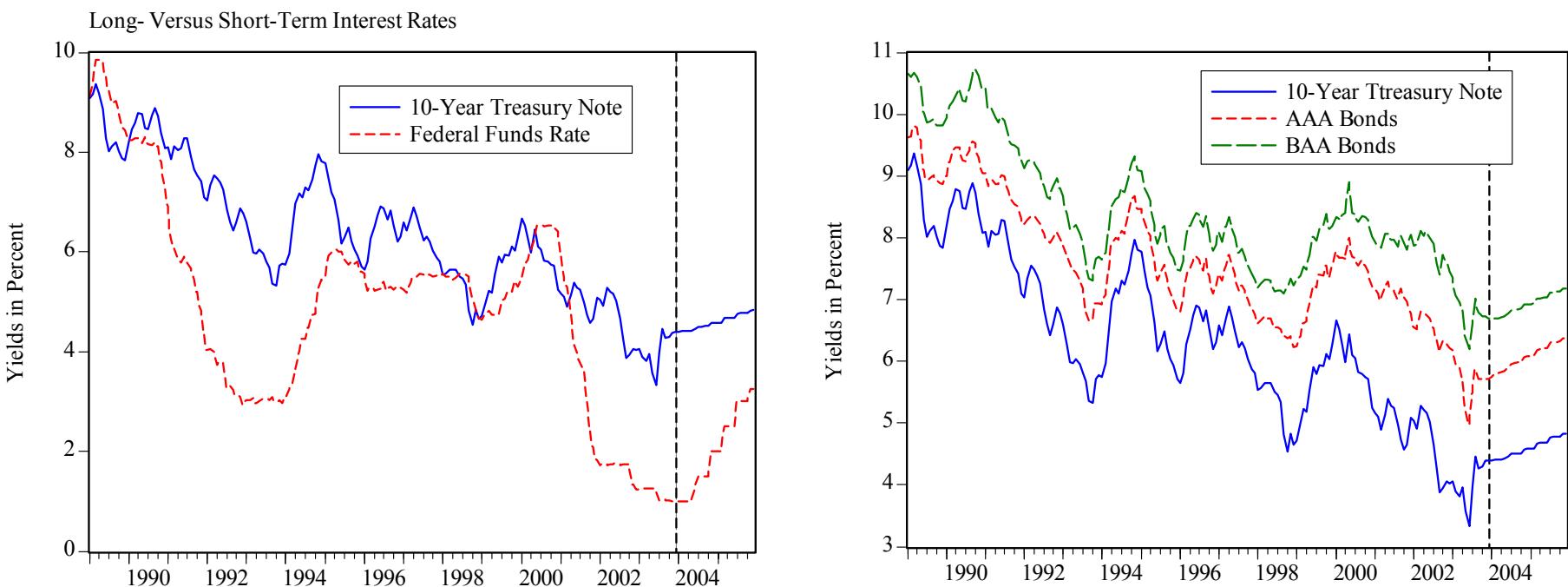
Timely removal of liquidity will keep long-term interest rates from rising during the forecast horizon

Credit risk spreads have narrowed

- Bankruptcy risks diminishing
- Demand for corporate bonds rising in face of low yields on Treasury securities

# Interest Rate Outlook – Graphic Portrayal

## *MTSU Baseline Interest Rate Forecast*





# The Tennessee Cycle in Perspective

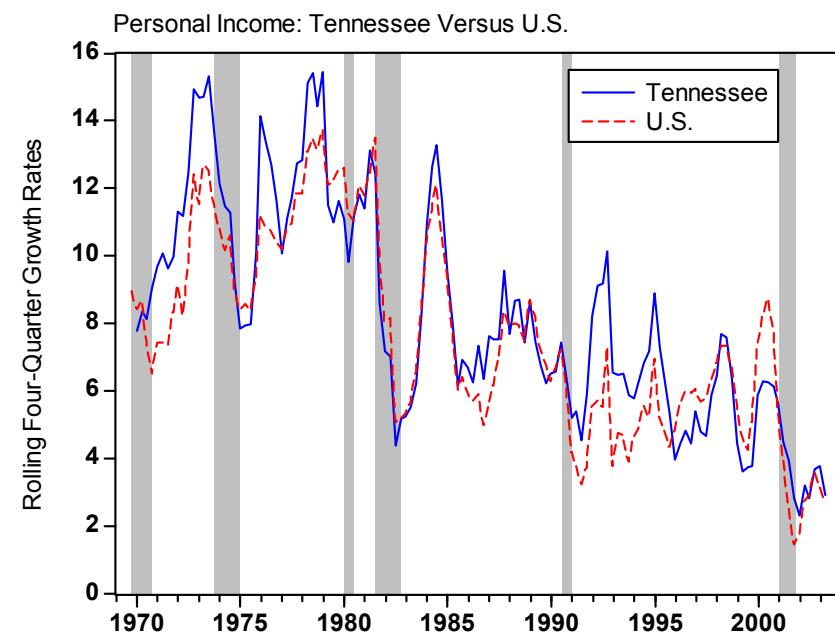
## *Personal Income – Tennessee Versus U.S.*

Quarterly growth in state and nation follows roughly the same cyclical pattern

- Each 1% growth in the U.S. is met with 1% growth in Tennessee with a lapse of about 8 quarters

Admittedly, there are sizeable short-run deviations between the two

- These differences seem to cancel out over an 8- to 9-quarter span



# The Tennessee Cycle in Perspective

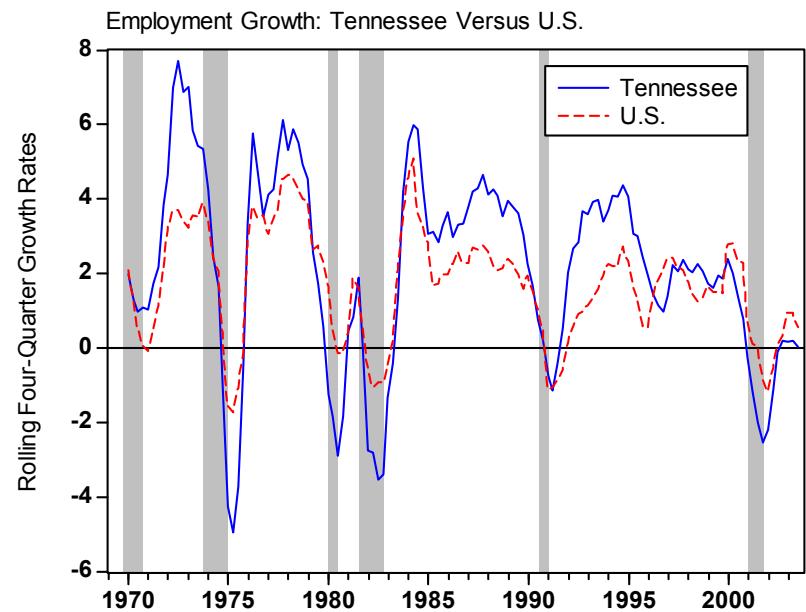
## *Labor Markets – Tennessee Versus U.S.*

Growth pattern moves roughly in tandem over time but differences are evident

Pattern has tighter co-movement as decline gathers momentum

In the upswing,

- Tennessee typically had a stronger pace of employment growth than the country as a whole
- Current expansion is the exception to this general pattern



# The Tennessee Cycle in Perspective

## *Housing Activity – Tennessee Versus U.S.*

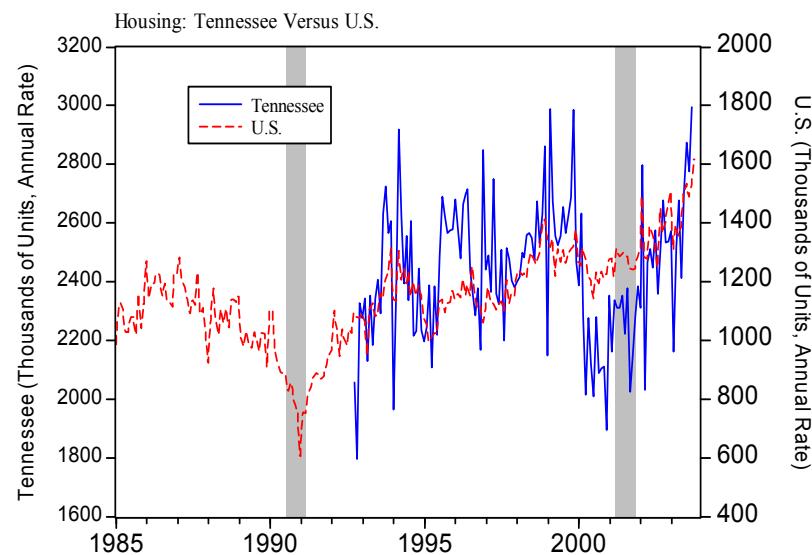
For the last year and a half, housing in Tennessee seems to be in line with the U.S. experience

Weakness in 2000 seemed relatively more severe in Tennessee than in U.S.

Rebound in late 2001-2003 attributable to lower mortgage rates

General state of housing in both Tennessee and the U.S. is not inconsistent with early phase of an expansion

But many see it as largely the product of low interest rates and too strong given lack of job growth



# The Tennessee Cycle in Perspective

## *Consumer Spending*

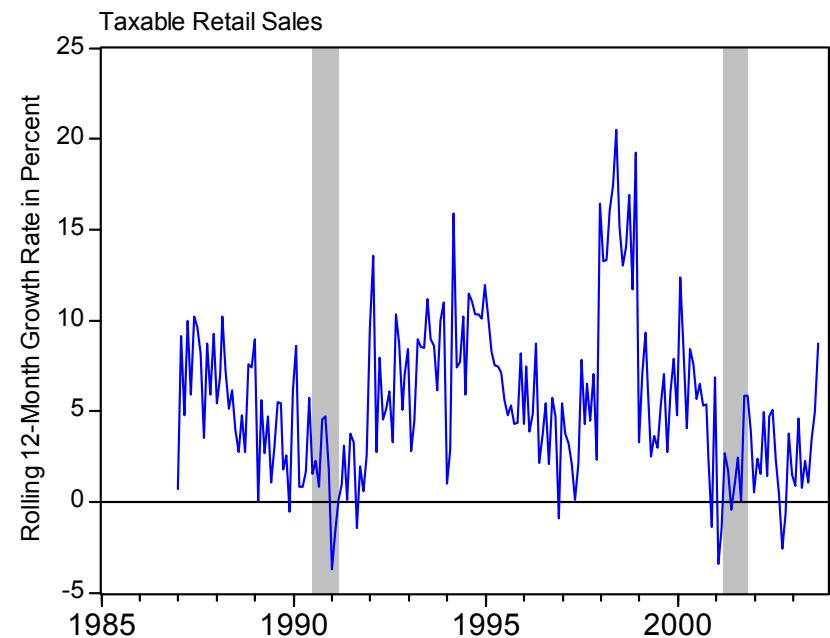
Rolling 12-month growth through June 2003 portrays an economy in the early stage of a recovery

Year-over-year declines in the last recession were out of phase with prior recession

- 1990 recession: growth was weak in early phase of recovery
- 2001 recession: sales fell prior to the recession and began to grow again during the recession

Current recovery: growth in taxable sales was slow longer than in the aftermath of the 1990 recession

- This could explain the weakness in sales tax collection until recently



**Baseline Tennessee Outlook**
**Table 8**

|                                  | 2003         |               |                  |               | 2004         |               |                |               | 2005         |               |                |               | Year-over-Year Growth |      |      |
|----------------------------------|--------------|---------------|------------------|---------------|--------------|---------------|----------------|---------------|--------------|---------------|----------------|---------------|-----------------------|------|------|
|                                  | I(A)<br>2003 | II(A)<br>2003 | III(A,E)<br>2003 | IV(E)<br>2003 | I(E)<br>2004 | II(E)<br>2004 | III(E)<br>2004 | IV(E)<br>2004 | I(E)<br>2005 | II(E)<br>2005 | III(E)<br>2005 | IV(E)<br>2005 | 2003                  | 2004 | 2005 |
| <b>National Trends</b>           |              |               |                  |               |              |               |                |               |              |               |                |               |                       |      |      |
| 1 Civilian Employment (Mil.)     | 137.4        | 137.6         | 137.6            | 137.9         | 138.2        | 138.5         | 138.8          | 139.2         | 139.6        | 140.0         | 140.5          | 140.9         | 0.8                   | 0.8  | 1.1  |
| 2 Change*                        | 2.3          | 0.6           | -0.2             | 0.9           | 1.0          | 0.9           | 0.9            | 1.1           | 1.1          | 1.2           | 1.3            | 1.2           |                       |      |      |
| 3 Personal Income                | 9080.2       | 9156.0        | 9247.0           | 9342.3        | 9448.2       | 9534.4        | 9632.8         | 9737.3        | 9845.9       | 9958.4        | 10077.7        | 10193.0       | 3.2                   | 4.1  | 4.5  |
| 4 Change*                        | 3.0          | 3.4           | 4.0              | 4.2           | 4.6          | 3.7           | 4.2            | 4.4           | 4.5          | 4.6           | 4.9            | 4.7           |                       |      |      |
| 5 Income Per Employee (T)        | 66.071       | 66.523        | 67.222           | 67.769        | 68.375       | 68.840        | 69.394         | 69.948        | 70.532       | 71.121        | 71.746         | 72.342        | 2.3                   | 3.4  | 3.3  |
| 6 Change*                        | 0.7          | 2.8           | 4.3              | 3.3           | 3.6          | 2.8           | 3.3            | 3.2           | 3.4          | 3.4           | 3.6            | 3.4           |                       |      |      |
| 7 Housing Start (Mil. of Units)  | 1.737        | 1.739         | 1.875            | 1.846         | 1.816        | 1.783         | 1.751          | 1.719         | 1.687        | 1.655         | 1.623          | 1.591         | 5.2                   | -1.8 | -7.3 |
| 8 Change*                        | -1.4         | 0.5           | 35.3             | -6.0          | -6.4         | -7.1          | -7.0           | -7.2          | -7.2         | -7.4          | -7.5           | -7.6          |                       |      |      |
| <b>Tennessee</b>                 |              |               |                  |               |              |               |                |               |              |               |                |               |                       |      |      |
| 9 Nonagricultural Employment (T) | 2663.5       | 2671.9        | 2675.5           | 2678.2        | 2683.1       | 2683.7        | 2692.1         | 2702.3        | 2712.0       | 2720.1        | 2725.4         | 2732.7        | 0.2                   | 0.7  | 1.2  |
| 10 Change*                       | -0.3         | 1.3           | 0.5              | 0.4           | 0.7          | 0.1           | 1.3            | 1.5           | 1.4          | 1.2           | 0.8            | 1.1           |                       |      |      |
| 11 Personal Income               | 162.3        | 163.4         | 165.3            | 167.1         | 169.1        | 170.8         | 172.8          | 174.9         | 177.1        | 179.3         | 181.6          | 183.9         | 3.7                   | 4.5  | 5.0  |
| 12 Change*                       | 4.7          | 2.9           | 4.6              | 4.5           | 4.9          | 4.0           | 4.8            | 4.9           | 5.1          | 5.1           | 5.2            | 5.2           |                       |      |      |
| 13 Dividends & Interest          | 24.0         | 23.9          | 24.3             | 24.8          | 25.3         | 25.7          | 26.0           | 26.5          | 27.0         | 27.6          | 28.1           | 28.6          | 0.3                   | 6.6  | 7.5  |
| 14 Change*                       | -2.0         | -0.7          | 6.9              | 8.0           | 8.1          | 6.6           | 5.4            | 6.8           | 8.0          | 8.6           | 8.5            | 7.5           |                       |      |      |
| 15 Income Per Employee (T)       | 60,920       | 61,170        | 61,782           | 62,399        | 63,028       | 63,640        | 64,184         | 64,718        | 65,291       | 65,913        | 66,621         | 67,291        | 3.4                   | 3.8  | 3.7  |
| 16 Change*                       | 5.0          | 1.6           | 4.1              | 4.1           | 4.1          | 3.9           | 3.5            | 3.4           | 3.6          | 3.9           | 4.4            | 4.1           |                       |      |      |
| 17 Retail Sales                  | 67.1         | 67.5          | 69.3             | 70.9          | 72.1         | 72.8          | 73.6           | 74.5          | 75.5         | 76.6          | 77.6           | 78.6          | 3.5                   | 6.6  | 5.2  |
| 18 Change*                       | 2.4          | 2.3           | 11.1             | 9.4           | 7.4          | 4.0           | 4.1            | 4.9           | 5.5          | 6.1           | 5.7            | 5.2           |                       |      |      |
| 19 Building Permits (T)          | 28,984       | 31,183        | 34,570           | 34,139        | 33,058       | 30,974        | 29,995         | 29,291        | 29,218       | 29,413        | 29,014         | 28,614        | 8.3                   | -4.3 | -5.7 |
| 20 Change*                       | -23.4        | 34.0          | 51.1             | -4.9          | -12.1        | -22.9         | -12.1          | -9.1          | -1.0         | 2.7           | -5.3           | -5.4          |                       |      |      |

Note: Except where noted, all data in billions of dollars. Historic sources: BEA, BLS, State of Tennessee

T=Thousands of units, persons, or dollars

\* Quarter-to-quarter percent changes expressed at compound annual rates.

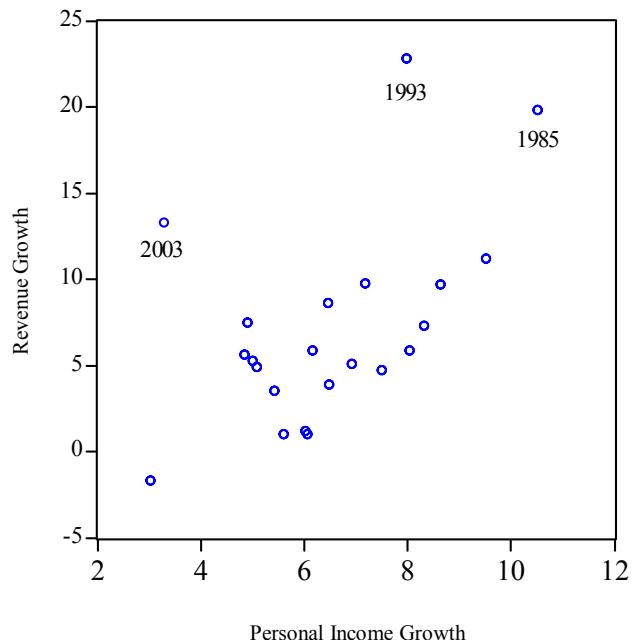
December 7, 2003



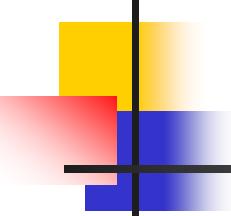
# A Consistency Check

Top-down forecasting model projects growth in tax revenue based on personal income growth, controlling for tax rate changes in 1985, 993. and 2003

Based on personal income projections, the consistency check is below



|                               | 2001    | 2002    | 2003    | 2004    | 2005    |
|-------------------------------|---------|---------|---------|---------|---------|
| Personal Income Growth        | 5.6     | 3.0     | 3.3     | 4.2     | 4.7     |
| Revenue Growth                | 1.0     | -1.7    | 13.2    | 3.0     | 3.6     |
| Revenue (Millions of Dollars) | 7,636.3 | 7,508.6 | 8,502.7 | 8,761.4 | 9,077.4 |



# The U.S. Outlook – Potential Problem Areas

## *Winning the peace*

- Military resistance in Iraq may be felt in the U.S. in terms of spending decision by households and businesses
  - Uncertainty can produce economic paralysis, weakening the upswing
  - Decision paralysis could drag down vehicle sales and housing

## *Pricing power*

- Global capacity limits ability of manufacturing to secure price increases, which affects ability to manage earnings

## *Deflation*

- Prices of goods less energy (CPI basis) fell 3.8 percent rate over the last 24 months versus a 6.2 percent increase for services less energy (CPI basis)

## *Jobs*

- This has been a “jobless” recovery
- Good news is the tremendous boost in productivity

## *Pensions*

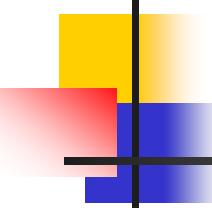
- Gains in value of defined benefit pensions have bolstered corporate earnings in the last few years

## *The dollar*

- Weakness is seemingly sought by administration to bolster exports
- Depreciating dollar reduces the foreign value of investments in U.S.
- This reduces appetite for U.S. investments by foreigners

## *Housing and vehicle sales*

- Neither fell during the recession
- Risk that “pre-spending” occurred



# Contingency View

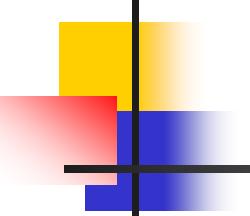
## *Re-emergence of Weak Growth*

### *Balance of global forces on the down side*

- Global growth remain weak
- Record trade deficit
- Weak and weakening dollar
- Possible currency war as others try to weaken their currency relative to dollar
- Depreciating dollar adversely affects foreign of dollar assets and discourages flow of dollar back to U.S.

### *Balance of domestic forces also weak*

- Manufacturing still weak
- Large scale excess capacity
- Jobless recovery in U.S.
- Lack of corporate pricing power
- CPI deflation in goods component less energy and food
- Under-funded defined-benefit pensions
- Housing and vehicle sales artificially supported by low interest rates



### *Balance of global forces on the downside*

- Global growth remains weak
- Record U.S. trade deficit
- Possible currency wars as other countries try to weaken their currency relative to the dollar
- Depreciating dollar adversely affects foreign value of dollar assets and discourages flow of dollars back to U.S.

### *Balance of domestic forces also weak*

- Manufacturing still weak
- Large scale excess capacity
- Jobless recovery in U.S.
- Lack of corporate pricing power
- CPI deflation in goods component less energy and food
- Underfunded defined-benefit pensions
- Housing and vehicle sales artificially supported by low interest rates

# Contingency View

## *Downside Risk Dominates Contingency View*

### *Probabilities*

- Stronger growth                    20%
- Baseline                            50%
- Weaker growth                    30%

### *Risk scenario*

- Faltering U.S. growth with spillover effects to Tennessee
- Personal income growth in Tennessee is 2 percent less in 2004 and 2005

The risk outlook, based on the consistency model reported, is below Had a line-by-line forecast been made, revenue growth would be a bit stronger in both years

|                               | 2001    | 2002    | 2003    | 2004    | 2005    |
|-------------------------------|---------|---------|---------|---------|---------|
| Personal Income Growth        | 5.6     | 3.0     | 3.3     | 2.2     | 2.7     |
| Revenue Growth                | 1.0     | -1.7    | 13.2    | 0.9     | 1.5     |
| Revenue (Millions of Dollars) | 7,636.3 | 7,508.6 | 8,502.7 | 8,580.3 | 8,707.0 |